

A New Genus, and First Host Records, for the Adeshini: Parasitoids of Hispine Beetles (Braconidae: Braconinae; Coleoptera: Chrysomelidae)

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Abstract.—The new genus *Aneuradesha* Quicke is described with its type species *A. harleyi* Quicke. This new species is a parasitoid of the hispine beetle, *Asmangulia cuspidata* Maulik, a pest of sugarcane and rice in India and Indonesia. In addition, we report that in insular Malaysia *Adesha albolineata* Cameron is a parasitoid of another hispine beetle, *Promecotheca cumingi* Baly, a pest of coconut palm. These are the first two host records for the braconine tribe Adeshini and strongly suggest that adeshines are specialist parasitoids of hispines.

Adeshini are a small, entirely tropical tribe of the large braconid wasp subfamily Braconinae, occurring in the Afrotropical, Oriental, Indo-Australian and Australian regions. They are known from only seven described species belonging to five genera (Achterberg 1983; Quicke 1986, 1988; Quicke & Ingram 1993), and the majority of these are known from only one or a few specimens. Until now, nothing was known about their biology, though many small tropical braconines are parasitoids of either leafminers, stem borers, or gall forming insects. Here we present the first host records for the tribe, based on two species, and describe a very distinctive new genus and species.

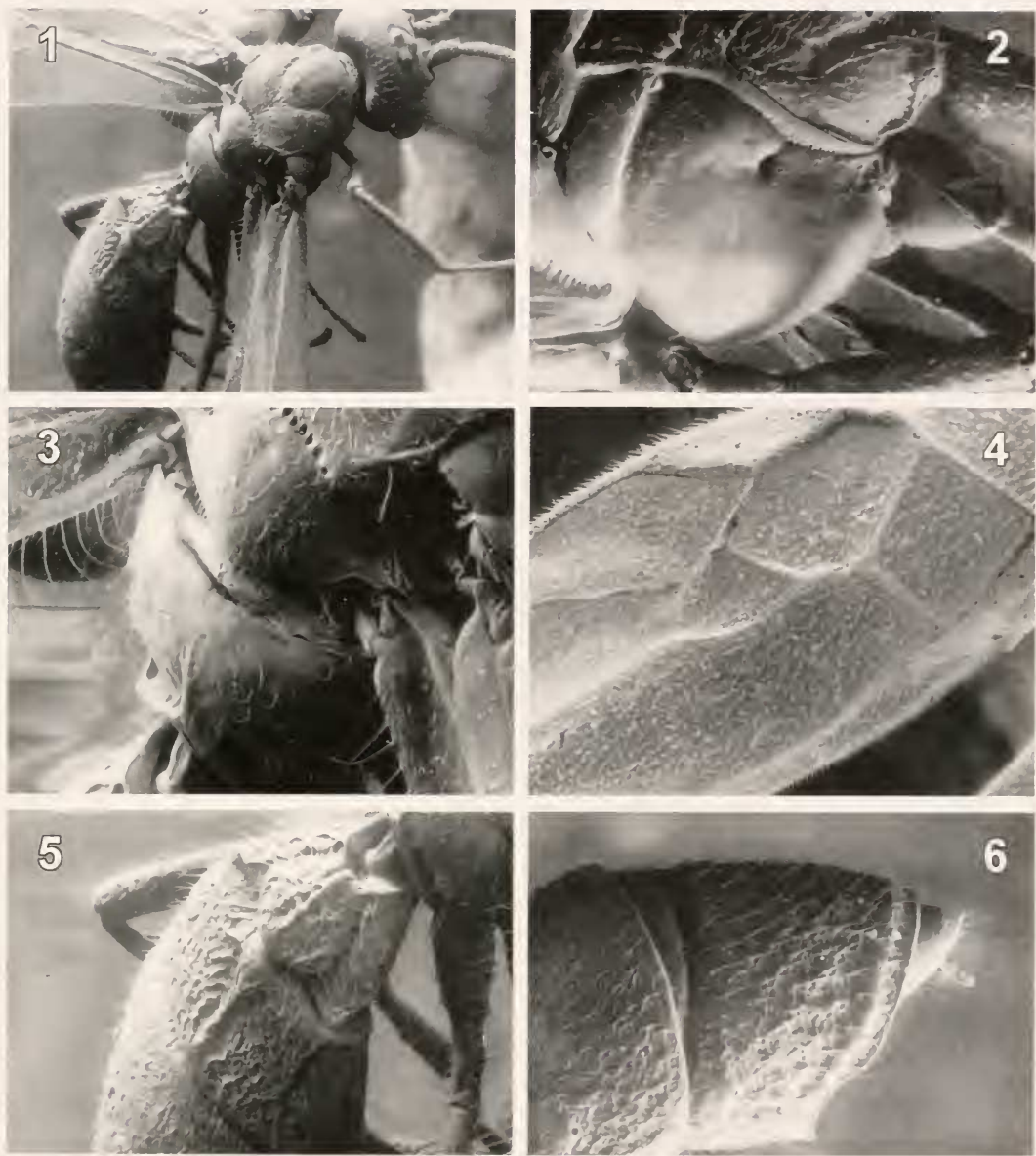
Terminology follows Wharton *et al.* (1997).

Aneuradesha Quicke gen. nov.

Diagnosis.—*Aneuradesha* can be distinguished from all other known genera of Adeshini by the complete absence of fore wing vein 2cu-a (Fig. 4; = vein CU1b in terminology of van Achterberg 1983), and also by the incomplete midlongitudinal

carina of the propodeum (Fig. 3). Members of the Adeshini can be recognised by fore wing vein 2CU arising at the same level as 1CU (Achterberg 1983; Quicke 1987).

Description.—Terminal flagellomere elongate, pointed but not acuminate. All flagellomeres much longer than wide; basal ones apically oblique. Face smooth and shiny. Hypoclypeus not strongly recessed into hypoclypeal depression. Eyes closest together below middle. Mesoscutum smooth and shiny, without a deep midlongitudinal groove (Fig. 1). Notauli deeply impressed, meeting at posterior third of mesoscutum where they form a weakly depressed punctate area (Fig. 1). Mesopleuron smooth, largely glabrous (Fig. 2). Middle lobe of metanotum without a midlongitudinal carina. Propodeum with an incomplete, midlongitudinal carina (Fig. 3). 2nd submarginal cell short, vein 2RS about as long as 3RSa. 2nd metasomal tergite with a distinct small midbasal area produced into a narrow midlongitudinal ridge (Fig. 5). 2nd metasomal suture narrow and crenulate.



Figs. 1-6. Environment chamber scanning electron micrographs of *Aneuradesha harleyi* gen. et sp. nov., male holotype: 1, habitus. 2, metapleuron. 3, scutellum to propodeum. 4, fore wing. 5, metasomal tergites 1-3. 6, lateral view of 5th metasomal tergite showing posterolateral emargination.

Type species.—*Aneuradesha harleyi* Quicke sp. n. by monotypy and original designation.

Remarks.—The complete lack of fore wing vein CU1b and the reduced propodeal carina are both probably autapomorphies of *Aneuradesha* with respect to the other genera of Adeshini.

Aneuradesha Harleyi Quicke sp. nov.
(Figs 1-6)

Type material.—Male holotype: INDIA: Muzzafarnagar, 8.vi.1998, Atar Singh, ex *Asmangulia cuspidata*, IIE 23897 (BMNH). Male paratype (BMNH): same data as holotype.

Antenna with 34 flagellomeres. Height of clypeus (excluding hypoclypeus): inter-tentorial distance:tentorio-ocular distance = 1.0:3.7:2.0. Height of eye:width of head across eyes: width of face = 1.0:2.6:1.4. Transverse diameter of posterior ocellus: distance between posterior ocelli:shortest distance between posterior ocellus and eye = 1.0:1.2:2.2. Mesosoma 1.2 times longer than maximum height. Mesoscutum (Fig. 1) smooth except for punctures at bases of setae; moderately densely setose except the mid-longitudinal part of the middle lobe. Scutellar sulcus finely crenulate. Scutellum with a weak but distinct pit. Propodeum (Fig. 3) crenulate posteriorly. Posterior margin of hind wing weakly emarginate. Lengths of veins 2RS:3RSa:r:m = 1.3:1.28:1.0. Lengths of veins r:3RSa:3RSb = 1:1.45:5.75. Lengths of veins (Rs + M)b:2M = 1.0:1.55. Fore wing vein 1cu-a marginally postfurcal. Vein 2-1A tubular for approximately half length of 1st subdiscal cell. Base of hind wing evenly setose. Apex of vein C + SC + R with one especially thickened bristle (basal hamulus). Lengths of hind femur (excluding trochantellus): tibia:basitarsus = 2.0:3.3:1.0. First and 2nd metasomal tergites rugose with overlying granulose sculpture; more posterior tergites granulose superimposed on weak foveate sculpture. Posterior margin of 5th tergite with a distinct, transverse subposterior groove (Fig. 6).

Uniformly honey-yellow except for the flagellomeres, an ill-defined mark on the raised median area of the 1st metasomal tergite and a mark medio-basally on the 2nd metasomal tergite, which are blackish.

Biologies of *Adesha Albolineata* and *Aneuradesha Harleyi*

Aneuradesha harleyi is so far known only from the hispine chrysomelid beetle *Asmangulia cuspidata* Maulik, a leafminer pest of sugarcane and rice in India and Indonesia. Anwar (1944) records a "*Microbracon*" sp. as an ectoparasitoid of *A. cuspidata* larvae causing up to 38% parasitisa-

tion. Since, to our knowledge, no other braconid has ever been recorded from *A. cuspidata*, it is conceivable that "*Microbracon*" represents a misidentification of the species treated here as *A. harleyi*.

The authors recently had the opportunity to examine material of another parasitoid of a hispine, *Promecotheca cumingi* Baly, a pest of coconut palm in south and southeast Asia (Gallego *et al.* 1983; Mathur *et al.* 1984). A series of 12 specimens, sent to the second author for identification, turned out to belong to the type species of the type genus of Adeshini, *Adesha albolineata* Cameron (see van Achterberg 1983, for a redescription of *Adesha albolineata*, and Quicke, 1986, for a key to species of *Adesha*). Previously, *Adesha* had been recorded from Borneo and the Malay Peninsula, and *A. albolineata* was known only from two specimens. According to the collector, *A. albolineata* is an ectoparasitoid of larvae of *P. cumingi*. There appears, therefore, to be a very reasonable basis for considering Adeshini as specialist ectoparasitoids of hispine larvae.

Adesha albolineata: Material Examined: 5♀5♂ MALAYSIA: Sarawak, Buntal *ex Promecotheca cumingi* on Nipah (*Cocos nucifera*) 20.v.1998 (Drahman coll.); 1♀ same data except 17.ii.1998, IIE 23809/ S132 (all specimens in The Natural History Museum, London).

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LITERATURE CITED

- Achterberg, C. van. 1983. Six new genera of Braconinae from the Afrotropical Region (Hymenoptera, Braconidae). *Tijdschrift voor Entomologie* 122: 175-202.
- Anwar, M. S. 1944. The natural control of *Asmangulia cuspidata* Maulik, the sugarcane leaf-miner, by parasites. *Indian Journal of Entomology* 5: 248-249.
- Gallego, V. C., Baltazar, C. R., Cadapan, E. P. and

- Abad, R. G. 1983. Some ecological studies on the coconut leafminer *Promecotheca cumingi* (Coleoptera: Hispididae) and its hymenopterous parasitoids in the Philippines. *Philippine Entomologist* 6: 471-493.
- Mathur, P. N., Samathanam, G. J. and Singh, A. 1984. Coconut leaf miner beetle (*Promecotheca cumingi* Baly). *Plant Protection Bulletin, India* 36: 91-93.
- Quicke, D. L. J. 1986. A revision of the Adeshini van Achterberg with descriptions of three new genera from the Palaetropics (Insecta, Hymenoptera, Braconidae). *Zoologica Scripta* 15: 265-274.
- Quicke, D. L. J. 1987. The Old World genera of braconine wasps (Hymenoptera: Braconidae). *Journal of Natural History* 21: 43-157.
- Quicke, D. L. J. 1988. A new genus and species of Adeshini (Hym., Braconidae, Braconinae) from Thailand. *Entomologists' Monthly Magazine* 124: 203-205.
- Quicke, D. L. J. and S. N. Ingram. 1993. Braconine wasps of Australia. *Memoirs of the Queensland Museum* 31: 299-336.
- Wharton, R. A., P. M. Marsh and M. J. Sharkey (Eds). *Manual of the New World genera of the family Braconidae (Hymenoptera)*. Special Publication of the International Society of Hymenopterists, No. 1.